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# EUROPEAN PATENT APPLICATION

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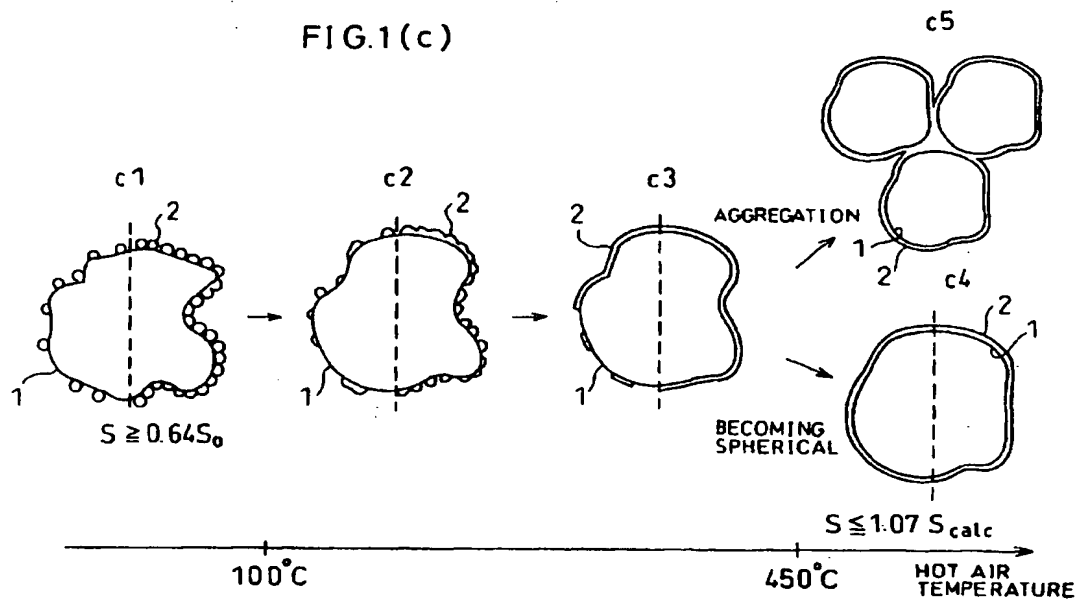
## (54) Electrophotographic toner and method of manufacturing same

(57) An electrophotographic toner is made up of toner particles composed of irregularly-shaped core particles made chiefly of binder resin, and surface-modifying fine particles which are first dispersed over and attached to the surface of the core particles, and then affixed or formed into a film thereon. The BET specific surface area, based on N<sub>2</sub> adsorption, of the toner particles is less than 0.64 times the BET specific surface area of the core particles and surface-modifying fine particles combined together. Further, this value is 1.07 times the BET specific surface area of hypothetical toner particles which

are perfect spheres. Consequently, the toner is not prone to problems such as filming, toner scattering, and fogging which are caused by peeling, separation, etc. of the surface-modifying fine particles, nor to poor cleaning due to spherical toner particles. Further, since the toner is manufactured with a quantitative grasp of the state of modification of the surface of the core particles by the surface-modifying fine particles, it is a toner in a stable state.

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FIG.1(c)





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# EUROPEAN SEARCH REPORT

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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>1 September 1999</b>	Examiner <b>Vogt, C</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPF FORM 1500 03/92 (1994/03/1)



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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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# EUROPEAN SEARCH REPORT

Application Number  
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DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>1 September 1999</b>	Examiner <b>Vogt, C</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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LACK OF UNITY OF INVENTION  
SHEET B

Application Number  
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-16

An electrophotographic toner of irregularly-shaped core particles mainly composed of resin and surface-modifying fine particles affixed or made into a film with specific BET surface area values (of core and film) and method of manufacturing said toner.

2. Claims: 17-29

An electrophotographic toner made up of core particles and fine polymer particles affixed or made into a film with specific molecular weight and glass transition points and method of manufacturing said toner.

3. Claims: 30-42

A method of manufacturing electrophotographic toner: producing core particles, using dry processing to attach fine particles to the surface of the core and affix or form the fine particles into a film; and the electrophotographic toner.



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Application Number  
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DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 1 September 1999	Examiner Vogt, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date O : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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